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10/539,829

06/20/2005

Kenji Ikoma

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EXAMINER

ALIE, GHASSEM

ART UNIT

PAPER NUMBER

3724

MAIL DATE

DELIVERY MODE

12/14/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/539,829

Applicant(s)

IKOMA, KENJI

Examiner

Ghassem Alie

Art Unit

3724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>06/20/05&amp;09/21/05</u> . | 6) <input type="checkbox"/> Other: _____  |

### *Drawings*

1. The drawings are objected to because the drawings in Fig. 3, reference number "52" does not point to any particular part.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims,

such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because it contains more than 150 words, which is not within the required range of 50 to 150 words. Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities: in page 12, line 3; "The combining mechanism 30" should be - The combining mechanism 30--. Appropriate correction is required.

#### ***Claim Objections***

5. Claim 1 and 6 are objected to because of the following informalities: Claim has a wrong status identifier since claim 1 has amended and it can not have "Original" as a status identifier. Claim 6 also has a wrong status identifier. It should be noted that the original claim 6 has been amended to an independent claim. Therefore the status identifier of the mended claim 6 can not be "Original." Regarding claim 1, "a rotation drive source" should be --a rotating drive source" and "a rotation outputting shaft" --a rotating output shaft --a rotational output shaft--. Regarding claims 1 and 6, "a secondary rotary shaft" should be --a second rotary shaft--. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 1, “a measuring tool”, “an input device” “a programmable cutting apparatus” and “a communication link” are not understood, since they have not been shown in the drawings or described in the specification. Regarding claim 1, “the data” lacks antecedent basis. Regarding claim 1, “a first conversion mechanism having a first rotary shaft parallel with the rotation outputting axis to which rotary motion from the rotation drive source is transmitted, for converting a rotary motion of the first rotary shaft so that a reciprocal motion is the predetermined to the first rotary shaft is including in a drive position provided eccentrically from the first rotary shaft” is confusing. It is not clear how the first conversion mechanism and the rotating output shaft are related. It is not clear how the rotary motion if the first drive shaft of the first conversion mechanism is converted to a reciprocal motion. It is not clear which part or section of the first conversion mechanism converts the rotary motion of the first rotary shaft of the first conversion mechanism to a reciprocal motion. It is also not clear what “the first rotary shaft is including in a drive position provided eccentrically from the first rotary shaft” means. It is not clear how the first rotary shaft is included in a drive position. It is not clear how a shaft is included in a drive position. It should be noted that the sentences in the claims are too long in a form of a long paragraph. This renders the real scope of the claim indefinite, since it is not clearly recite how the structures set forth in the claims are related to one another. claims 1 and 6, a second conversion mechanism provided in pair with the first convention mechanism so as not to be

in contact with the first conversion mechanism and arranged symmetric with the first conversion mechanism with respect to a reference virtual plane parallel with the predetermined reciprocating drive direction, for converting a rotary motion of a secondary rotary shaft which rotates at equal speed reverse to and is parallel with the first rotating shaft so that a reciprocating motion in the reciprocating drive direction is included in a drive position provided eccentrically from the second rotary shaft, synchronously with a reciprocal motion converted by the first conversion mechanism” is confusing. It is not clear what converts the rotary motion of a secondary rotary shaft to a reciprocal motion. It is not clear how the second rotary shaft is related to the second conversion mechanism. It is not clear what “a reciprocal motion in the reciprocating drive direction is included in a drive position eccentrically from the second rotary shaft, synchronously with a reciprocal motion converted by the first conversion mechanism” means. It is not clear how many reciprocal motions have been claimed and how the reciprocal motions are related. It is also not clear how many drive positions have been claimed and how the drive positions are related to the first and second conversions mechanisms. Regarding claims 1 and 6, “a combining mechanism for extracting and combining together reciprocal motions in the drive direction converted from rotary motions by the first conversion mechanism and the second conversion mechanism, respectively; a first counter weight having a center of gravity in a position on a side symmetric with the drive position with respect to the first rotary shaft, for taking a balance with an offset load occurring upon motion conversion; and a second counter weight provided in pair with the first counter weight and having a center of gravity in a position on a side symmetric with the drive position with respect to the second rotary shaft, for taking a balance

with an offset load occurring upon motion conversion” is confusing. It is not clear where the first counter weight and the second counter weight are exactly located. It is not clear where the center of gravity of each of the first and second counter weights is located. It is not clear what “for taking a balance with an offset load occurring upon motion conversion” means.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 3, 7 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Bladie et al. (5,458,557), hereinafter Bladie. Regarding claim 1, as best understood, Bladie teaches a vibration damping apparatus for reciprocating drive, for damping vibration occurring upon conversion of rotary motion which is obtained on a rotation outputting shaft of a rotation drive source into reciprocal motion in a predetermined reciprocating drive direction perpendicular to the rotation outputting shaft. It should be noted that the belt 101 is inherently connected to a shaft or a shaft of the pulley which is parallel to the first rotating shaft 20a, 30a. Bladie also teaches a first conversion mechanism 20 having a first rotary shaft 20a parallel with the rotation outputting axis to which rotary motion from the rotation drive source is transmitted, for converting a rotary motion of the first rotary shaft 20 so that a reciprocal motion is the predetermined to the first rotary shaft is including in a drive position provided eccentrically from the first rotary shaft. Bladie also teaches a second conversion mechanism 30 provided in pair with the first convention mechanism 20 so as not to be in

contact with the first conversion mechanism and arranged symmetric with the first conversion mechanism 20 with respect to a reference virtual plane parallel with the predetermined reciprocating drive direction, for converting a rotary motion of a secondary rotary shaft which rotates at equal speed reverse to and is parallel with the first rotating shaft so that a reciprocating motion in the reciprocating drive direction is included in a drive position provided eccentrically from the second rotary shaft, synchronously with a reciprocal motion converted by the first conversion mechanism. Bladie also teaches a combining mechanism 10 for extracting and combining together reciprocal motions in the drive direction converted from rotary motions by the first conversion mechanism and the second conversion mechanism, respectively; a first counter weight 26 having a center of gravity in a position on a side symmetric with the drive position with respect to the first rotary shaft, for taking a balance with an offset load occurring upon motion conversion; and a second counter weight 36 provided in pair with the first counter weight and having a center of gravity in a position on a side symmetric with the drive position with respect to the second rotary shaft, for taking a balance with an offset load occurring upon motion conversion. Bladie also teaches that the rotary driving force from the rotation drive source is transmitted via a belt 101 to the first conversion mechanism 20 and the second conversion mechanism 30. It should be noted that the circular frame 20 does not contact the circular frame 30, as clearly shown in Fig. 1.

Regarding claim 3, Bladie teaches everything noted above including that the combining mechanism carries out the combining so that drive direction is on the reference virtual plane.



Regarding claims 7 and 12, Bladie teaches everything noted above including that the vibration damping apparatus for reciprocating drive. Bladie also teaches that the apparatus is a cutting head since it could be fixed to any frame or support. Bladie also teaches a cutting blade on a reciprocating motion combined with the combining mechanism. It should be noted that shaft 11, 12 could be considered as a combining mechanism and the blade 10 as a reciprocating blade. See Fig. 3 in Bladie.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 1, 3-5, 7, 10, 12-13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blachly (2,949,944) in view of Bladie. Regarding claims 1, 3-5, 7, 10, 12-13 and 14, Blachly teaches substantially the claimed invention including a cutting head 5 having a reciprocating blade 9. Blachly also teaches that a coupling member 60 pivotally and displaceably coupled to one end of crank rod 43 and guide mechanism 45 for guiding a reciprocating motion combined by the coupling member in the drive direction. It should be noted that the cutting apparatus 5 is considered to be a cutting head which is capable of being connected to a frame, such as the one taught in Gerber 4,879,935. Blachly does not teach the specifics of the vibration damping apparatus and the crank rod of first and second conversion mechanisms connected to the coupling member. However, Bladie, as stated above, teaches substantially the vibration damping apparatus as claimed including that the first conversion

mechanism 20 and the second conversion mechanism 30 are crank mechanisms each provided with a crank rod 25, 35, respectively, having one end pivotally and displaceably coupled to the drive. It should be noted that Bladie's crank rods could be attached to Blachly's coupling member 60 which is connected to the blade 9. Therefore, it would have been obvious to a person of ordinary skill in the art provide Blachly's cutting apparatus with the vibration damping, as taught by Bladie, in order to crate equip the apparatus with counter weights that rotate in opposite directions and enhance the balance of the apparatus.

12. Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bladie in view of Cain (2,706,637). Regarding claim 6, Bladie teaches everything noted above except a rotation drive source for deriving a rotation output from a driving pulley; a first driven pulley provided on the first rotary shaft; a second driven pulley provided on the second rotary shaft so as to be paired with the first driven pulley; an idle pulley provided so as to freely rotate; and a belt stretched over the driving pulley, the first driven pulley, the second driven pulley and the idle pulley, for conveying a rotation drive force from the driving pulley to the first driven pulley and the second driven pulley so that rotational directions of the rotation drive force become different between the first driven pulley and the second driven pulley. However, the use of alternative drive source for rotating conversion mechanism in reciprocating devices is well known in the art such as taught by Cain. Cain teaches a rotation drive source for deriving a rotation output from a driving pulley 28; a first driven pulley 30 provided on the first rotary shaft 36; a second driven pulley 31 provided on the second rotary shaft 37 so as to be paired with the first driven pulley; an idle pulley 25 provided so as to freely rotate; and a belt 26, 32 stretched over the driving pulley 28, the first

driven pulley 30, the second driven pulley 31 and the idle pulley 25, for conveying a rotation drive force from the driving pulley to the first driven pulley and the second driven pulley so that rotational directions of the rotation drive force become different between the first driven pulley and the second driven pulley. See Figs. 1-6 and col. 3, lines 1-25 in Cain. It would have been obvious to a person of ordinary skill in the art to provide Bladie' cutting apparatus with an alternative driving mechanism, as taught by Cain, since both driving mechanisms taught by Blaide and Cain are art recognized equivalents which produce the same result.

Regarding claim 15, Bladie teaches everything noted above including that the vibration damping apparatus for reciprocating drive. Bladie also teaches that the apparatus is a cutting head since it could be fixed to any frame or support. Bladie also teaches a cutting blade on a reciprocating motion combined with the combining mechanism. It should be noted that shaft 11, 12 could be considered as a combining mechanism and the blade 10 as a reciprocating blade. See Fig. 3 in Bladie.

#### ***Allowable Subject Matter***

13. Claims 2, 8-9 and 11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

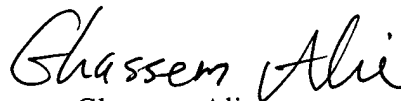
14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Harkness et al. (5,282,397), Felton (2,525,491), Gerber (4,879,935), and Wolfram (2,962,910).

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ghassem Alie whose telephone number is (571) 272-4501. The examiner can normally be reached on Mon-Fri 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, SEE <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ghassem Alie  
Patent Examiner  
Art Unit 3724

GA

December 11, 2007